

AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior listings of claims in the present application.

What is claimed is:

1-7. (canceled)

8. (original) A method of manufacturing a flip-chip type semiconductor device comprising the steps of:

forming a pad electrode on a semiconductor substrate;

forming an insulating film on the entire surface of the semiconductor substrate and removing the insulating film on the pad electrode to form an opening;

forming a metal thin film layer on the entire surface of the semiconductor substrate and patterning the metal thin film layer to form a wiring portion;

forming a resist film on the entire surface of the semiconductor substrate, patterning the resist film to remove the resist film on the wiring portion, and forming an opening to form an electrode in the opening;

forming a metal bump on the electrode;

arranging a support plate above the semiconductor substrate with an appropriate interval between said support plate and said semiconductor substrate, said support plate having holes each having a diameter larger than the diameter of the metal bump and formed at positions adjusted to the positions where the metal bump are arranged; and

injecting an insulating resin between the semiconductor substrate and the support plate.

9. (original) A method of manufacturing a flip-chip type semiconductor device according to claim 8, wherein the support plate is made of a conductive material, and an insulating film and a metal film are formed on the support plate in the order named, and said method comprises burying a conductive adhesive agent into the hole of the support plate located at the metal bump, having the ground potential, of the metal bumps is held.

10. (original) A method of manufacturing a flip-chip type semiconductor device according to claim 8, wherein the support plate is made of an insulating material, and a metal film is formed on the surface of the insulating material, and said method comprises burying a conductive adhesive agent into a hole of the support plate located at a metal bump, having a ground potential, of the metal bumps.

11. (original) A method of manufacturing a flip-chip type semiconductor device according to claim 8, wherein the support plate is arranged above the semiconductor substrate by arranging jigs each having an appropriate thickness at both ends of the semiconductor substrate and placing the support plate on said jigs.

12. (new) A method of manufacturing a flip-chip type semiconductor device according to claim 8, wherein a periphery of a joint portion between the metal bump and the electrode is covered with the insulating resin layer.

13. (new) A method of manufacturing a flip-chip type semiconductor device according to

claim 8, wherein the insulating resin layer contains at least one resin selected from the group consisting of an epoxy-based resin, a silicon based resin, a polyimide-based resin, a polyolefin-based resin, a cyanate ester-based resin, a phenol-based resin, a naphthalene-based resin, and a fluorene-based resin.

14. (new) A method of manufacturing a flip-chip type semiconductor device according to claim 8, wherein the insulating film is made of a photosensitive material.

15. (new) A method of manufacturing a flip-chip type semiconductor device according to claim 8, wherein the insulating film has a thermal decomposition temperature of not less than 200 degrees Celsius.

16. (new) A method of manufacturing a flip-chip type semiconductor device comprising the steps of:

providing a semiconductor substrate including a pad electrode and an insulating film on a first area of a surface of the semiconductor substrate, the first surface not including the pad electrode;

providing a patterned metal thin film layer on a second area of the surface of the semiconductor substrate to form a wiring portion;

providing a patterned resist film on a third area of the surface of the semiconductor substrate, the third area not overlapping the first and second areas;

providing at least one metal bump on the electrode;

arranging a support plate above and spaced away from the semiconductor substrate, the support plate having at least one hole; and

injecting an insulating resin between the semiconductor substrate and the support plate; wherein a first number of holes is equal to a second number of metal bumps, each hole includes a first diameter larger than a second diameter of each metal bump, and each hole is at a first position corresponding to a second position of each metal bump.

17. (new) A method of manufacturing a flip-chip type semiconductor device according to claim 16, wherein the support plate is made of a conductive material, and an insulating film and a metal film are formed on the support plate in the order named, and said method comprises burying a conductive adhesive agent into the hole of the support plate located at the metal bump, having the ground potential, of the metal bumps is held.

18. (new) A method of manufacturing a flip-chip type semiconductor device according to claim 16, wherein the support plate is made of an insulating material, and a metal film is formed on the surface of the insulating material, and said method comprises burying a conductive adhesive agent into a hole of the support plate located at a metal bump, having a ground potential, of the metal bumps.

19. (new) A method of manufacturing a flip-chip type semiconductor device according to claim 16, wherein the support plate is arranged above the semiconductor substrate by arranging jigs each having an appropriate thickness at both ends of the semiconductor substrate and placing the support plate on said jigs.